

7. Jimothy

Program Name: Jimothy.java

Input File: jimothy.dat

You and Jimothy have a paper on Binary Search tree traversals due tomorrow. Write a program that will, given a list of strings, generate a binary search tree, and run a pre-order, in-order, post-order, and reverse-order traversal on it. You should construct the binary search tree as normal, and the traversals should be as normal as well.

Input: The input will begin with an integer, n ($0 < n \leq 1000$), denoting the number of test cases to follow. Each test case will consist of an unknown number of space-separated strings to be put into the binary search tree. They should be inserted into the tree in the order given, duplicates should be inserted into the left side of the tree.

Output: First output the string "TEST CASE #n:", where n is replaced with the number of the test case, starting at 1. Then, on the following line, output the string "PRE-ORDER TRAVERSAL: ", the elements of the tree after being traversed in pre-order, all separated by spaces. Then, on the following line, output the string "IN-ORDER TRAVERSAL: ", the elements of the tree after being traversed in in-order, all separated by spaces. Then, on the following line, output the string "POST-ORDER TRAVERSAL: ", the elements of the tree after being traversed in post-order, all separated by spaces. Then, on the following line, output the string "REVERSE-ORDER TRAVERSAL: ", the elements of the tree after being traversed in reverse-order, all separated by spaces.

Sample input:

```
3
Never Gonna Give You Up
Somewhere Over The Rainbow Way Up High
Dont Stop Believing
```

Sample output:

```
TEST CASE #1:
PRE-ORDER TRAVERSAL: Never Gonna Give You Up
IN-ORDER TRAVERSAL: Give Gonna Never Up You
POST-ORDER TRAVERSAL: Give Gonna Up You Never
REVERSE-ORDER TRAVERSAL: You Up Never Gonna Give
TEST CASE #2:
PRE-ORDER TRAVERSAL: Somewhere Over High Rainbow The Way Up
IN-ORDER TRAVERSAL: High Over Rainbow Somewhere The Up Way
POST-ORDER TRAVERSAL: High Rainbow Over Up Way The Somewhere
REVERSE-ORDER TRAVERSAL: Way Up The Somewhere Rainbow Over High
TEST CASE #3:
PRE-ORDER TRAVERSAL: Dont Believing Stop
IN-ORDER TRAVERSAL: Believing Dont Stop
POST-ORDER TRAVERSAL: Believing Stop Dont
REVERSE-ORDER TRAVERSAL: Stop Dont Believing
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